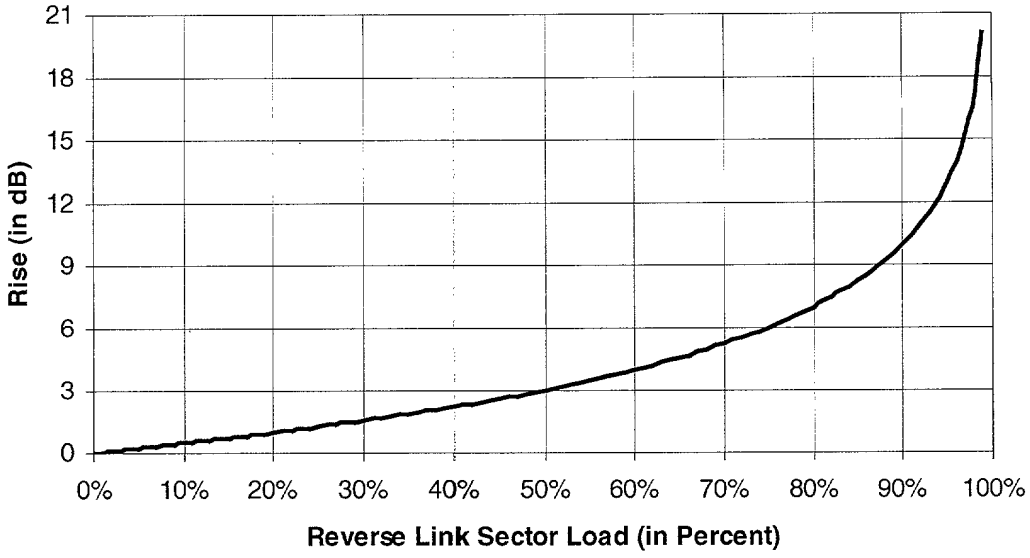



Fig 1

- 400 -

| Data Rate (bps) | Data Channel Gain Relative to Pilot (dB) |
|---|---|
| 4800 | DataPilotRatio + DataOffset4k8 - 3 |
| 9600 | DataPilotRatio + DataOffset9k6 |
| 19200 | DataPilotRatio + DataOffset19k2 + 3 |
| 38400 | DataPilotRatio + DataOffset38k4 + 6 |
| 76800 | DataPilotRatio + DataOffset76k8 + 9 |
| 153600 | DataPilotRatio + DataOffset153k6 + 12 |

Fig 4

Qualcomm Ex. 1010
IPR2015-00809

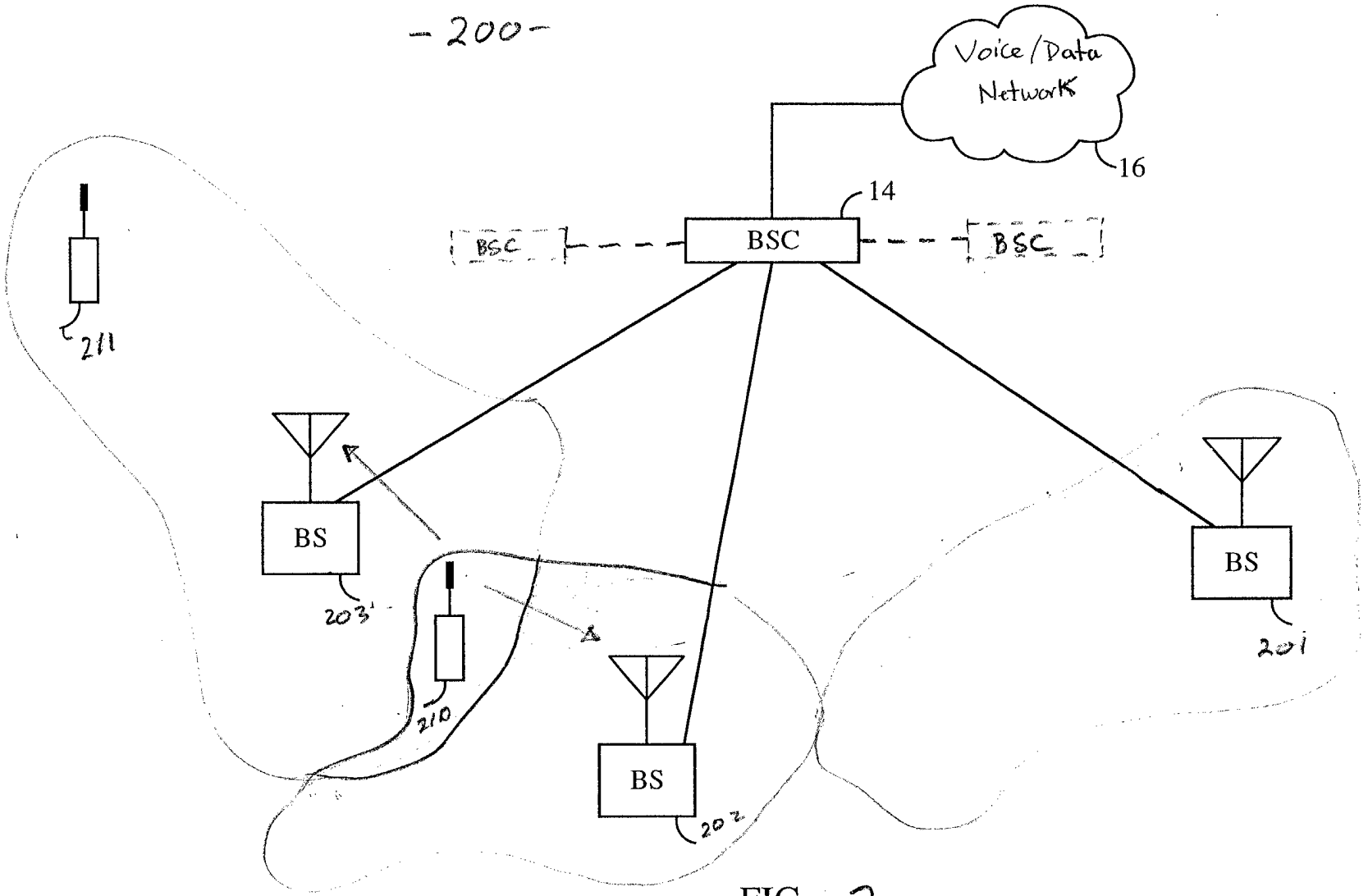
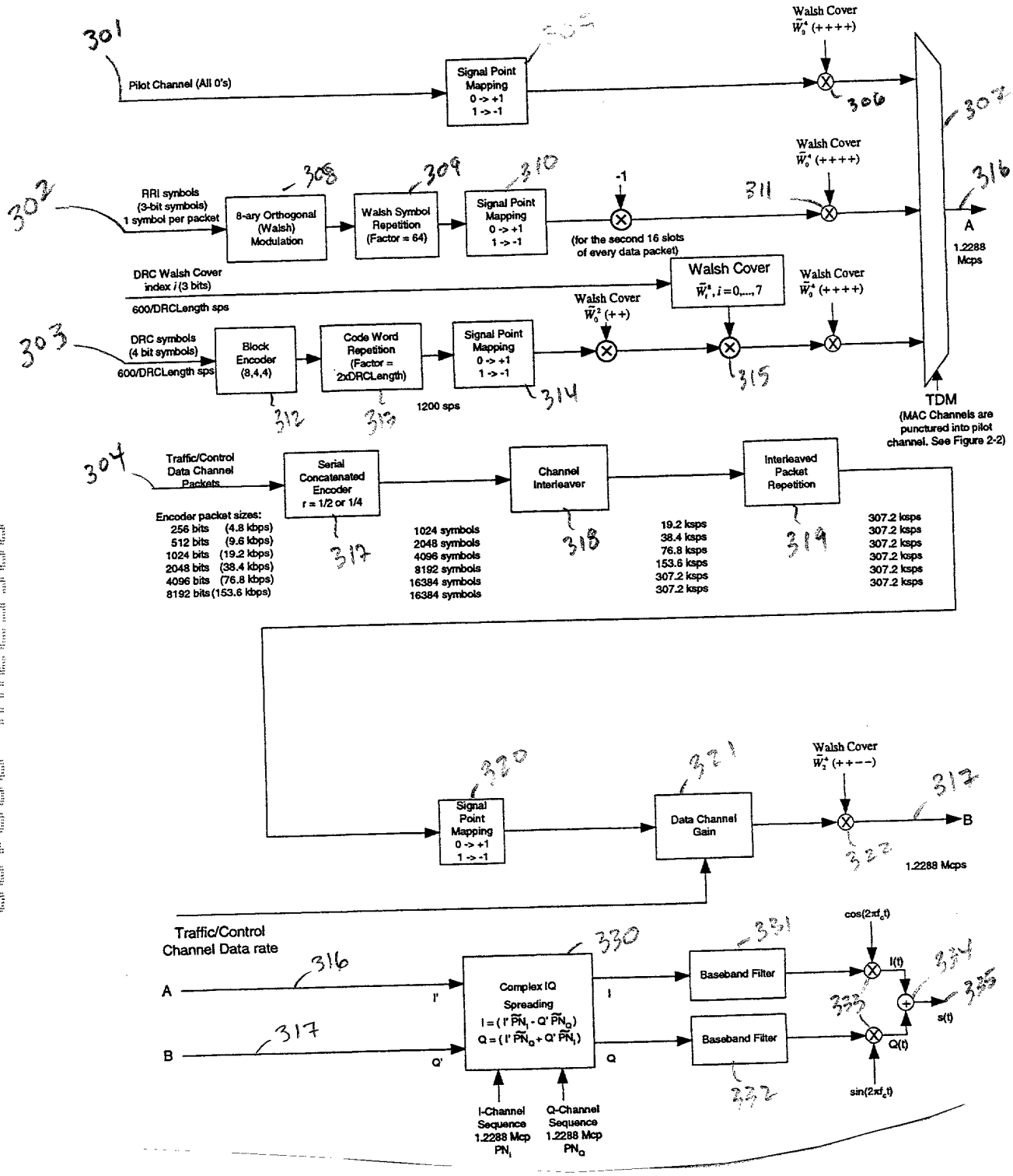

-200-
Voice/Data Network
16
14
BSC
BSC
BSC
211
BS
203'
210
BS
202
BS
201

FIG. 2


301
Pilot Channel (All 0's)
Signal Point Mapping 0 -> +1 1 -> -1
Walsh Cover $\bar{W}_0^4$ (++++)
306
307
302
RRI symbols (3-bit symbols) 1 symbol per packet
8-ary Orthogonal (Walsh) Modulation
Walsh Symbol Repetition (Factor = 64)
Signal Point Mapping 0 -> +1 1 -> -1
-1
(for the second 16 slots of every data packet)
311
316
A
1.2288 Mcps
DRC Walsh Cover index i (3 bits)
600/DRCLength sps
Walsh Cover $\bar{W}_i^8, i=0,...,7$
Walsh Cover $\bar{W}_0^2$ (++)
303
DRC symbols (4 bit symbols)
600/DRCLength sps
Block Encoder (8,4,4)
Code Word Repetition (Factor = 2xDRCLength)
Signal Point Mapping 0 -> +1 1 -> -1
1200 sps
312
313
314
315
TDM
(MAC Channels are punctured into pilot channel. See Figure 2-2)
304
Traffic/Control Data Channel Packets
Serial Concatenated Encoder r = 1/2 or 1/4
Channel Interleaver
Interleaved Packet Repetition
Encoder packet sizes:
256 bits (4.8 kbps)
512 bits (9.6 kbps)
1024 bits (19.2 kbps)
2048 bits (38.4 kbps)
4096 bits (76.8 kbps)
8192 bits (153.6 kbps)
317
1024 symbols
2048 symbols
4096 symbols
8192 symbols
16384 symbols
16384 symbols
318
19.2 ksps
38.4 ksps
76.8 ksps
153.6 ksps
307.2 ksps
307.2 ksps
319
307.2 ksps
307.2 ksps
307.2 ksps
307.2 ksps
307.2 ksps
307.2 ksps
320
Signal Point Mapping 0 -> +1 1 -> -1
321
Data Channel Gain
Walsh Cover $\bar{W}_2^4$ (++--)
317
B
322
1.2288 Mcps
Traffic/Control Channel Data rate
316
A
317
B
330
Complex IQ Spreading
$I = (I' \tilde{PN}_I - Q' \tilde{PN}_Q)$
$Q = (I' \tilde{PN}_Q + Q' \tilde{PN}_I)$
I'
Q'
I
Q
331
Baseband Filter
Baseband Filter
332
cos(2πf_c t)
sin(2πf_c t)
I(t)
Q(t)
333
334
335
s(t)
I-Channel Sequence 1.2288 Mcp $PN_I$
Q-Channel Sequence 1.2288 Mcp $PN_Q$

-300-

FIG. 3

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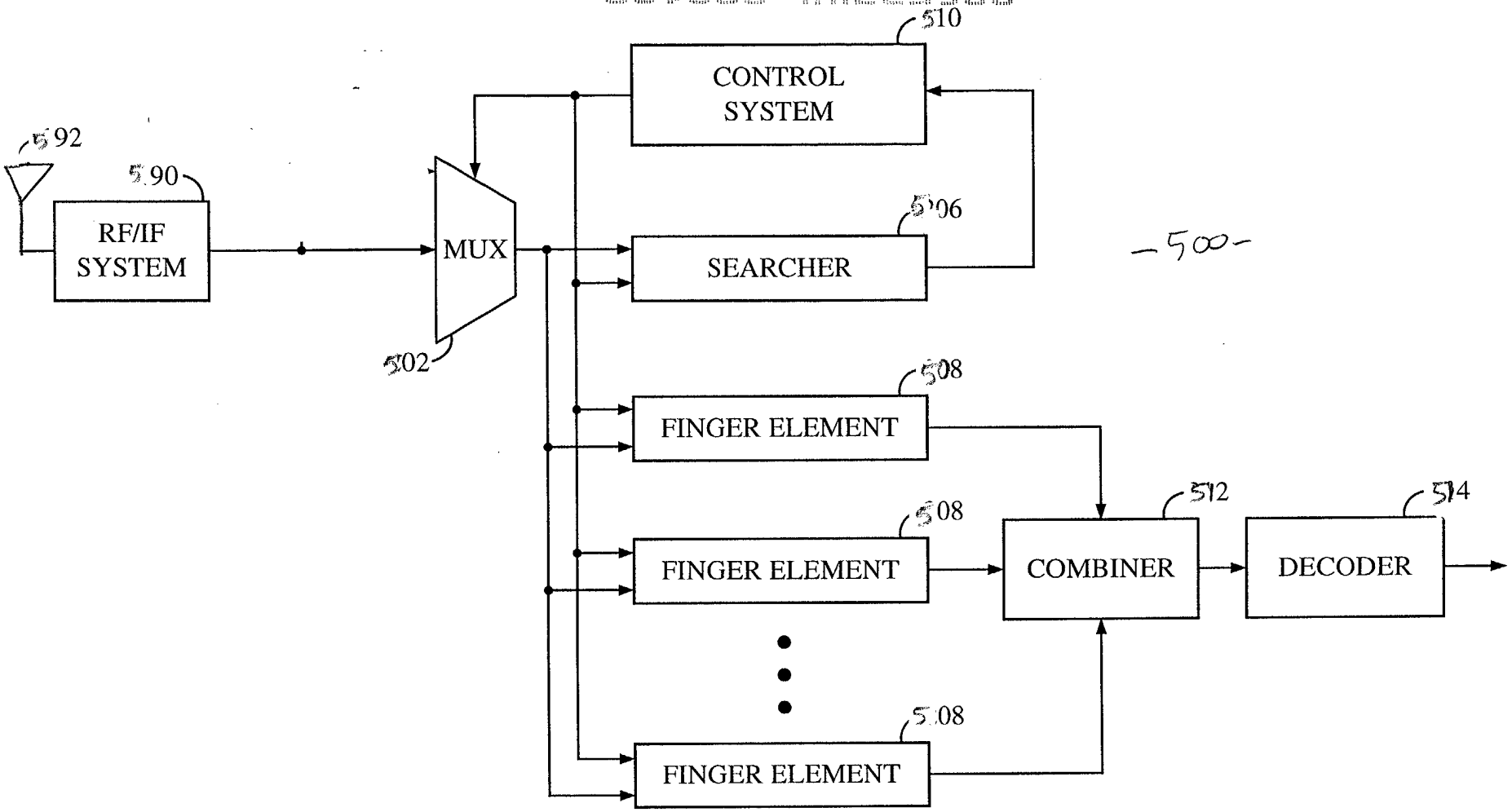


FIG. 5

600
Measure the ratio of reverse link pilot channel power to total power for each user ( $PNR_i$ )
601
Determine the data rate for each user ( $r_i$ ) using explicit reverse rate indicator (RRI), assuming a zero data rate for users that the RRI cannot be determined
602
Determine the ratio of signal power to pilot power ( $\gamma_i[r_i]$ ) for the determined data rate ( $r_i$ )
603
Determine the ratio of the reverse link signal power to the reverse link total power for each user ( $SNR_i$ ) by scaling the measured pilot power to total power ( $PNR_i$ ) by the known ratio of signal power to pilot power ( $\gamma_i[r_i]$ ), That is, $SNR_i = \gamma_i[r_i]PNR_i$
604
Determine the ratio of reverse link signal power to total reverse link power ( $SNR_T$ ) by summing the users ratio of signal power to total power ( $SNR_i$ ), M being the total number of users, That is, $SNR_T = \sum_{i=1}^{M} SNR_i = \sum_{i=1}^{M} \gamma_i[r_i]PNR_i$
605
Determine the rise using the equation $Rise = \frac{1}{1-SNR_T} = \frac{1}{1-\sum_{i=1}^{M} \gamma_i[r_i]PNR_i}$
and the load using equation $Load = SNR_T = \sum_{i=1}^{M} \gamma_i[r_i]PNR_i$
606

Fig 6